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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,556	11/25/2003	Baosheng D. Huang	112948CON	5831
26652	7590	03/27/2008		
AT&T CORP. ROOM 2A207 ONE AT&T WAY BEDMINSTER, NJ 07921			EXAMINER JAGANNATHAN, MELANIE	
			ART UNIT 2619	PAPER NUMBER
			MAIL DATE 03/27/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/721,556

Applicant(s)

HUANG ET AL.

Examiner

Melanie Jagannathan

Art Unit

2619

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/CDC)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

DETAILED ACTION

- Examiner has considered Amendment after Non-Final mailed 1/11/2008.
- Claims 16-25 are pending.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 16-21, 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beshai U.S. 6,356,546.

Regarding claim 16-17, 23-25, the claimed receiving a request for a path through a network of structure groups between a source node and a sink node is disclosed by

connection admission request from source includes connection admission parameters and different classes of service. See column 2, lines 49-67 and column 3, lines 6-31.

The claimed determining virtual circuit information for each structure group in network of structure groups is disclosed by five-module network with each module (Figure 10, elements A-E) having local ports. The claimed determination of virtual circuit information for each structure group in network is disclosed by local ports routing traffic to local sinks (Figure 10). See column 19, lines 18-40. The modules being interconnected by links where a module (Figure 10, element A) can send data to another module (element C) by direct route (element 99) or through two-link routes (elements 100-101 or 102-103). The claimed determination of path using virtual circuit information includes the number of path using a common channel through structure group between any pair of nodes is disclosed by each module having a module control element (Figure 7, element 85) that receives least cost routing table information from network controller to be used to select route for each path. See column 15, lines 37-61. The cost of each route being taken into account and that route lengths are also taken into account since they contribute in a substantial cost difference between routes. See column 16, lines 39-65. The direct route between nodes is attempted first but if none of the direct routes are available then alternate routes involving two hops are attempted in order to minimize cost of route. See column 16, lines 39-65.

Beshai discloses each module maintaining a record of resources consumed by the path from a resource pool and a connection control table maintaining active connections. Each module selects least cost routes based on availability and the

availability of routes is updated periodically. See column 12, lines 51-65 and column 15, line 37-56. However, Beshai does not explicitly disclose the claimed slot-edge matrix is maintained for each data structure for requestable time periods, the availability of a channel is determined based on the slot-edge matrix. At the time the invention was made it would have been obvious to modify Beshai's connection tables to be maintained for time frame requested. One of ordinary skill in the art would be motivated to do so to provide quality of service to sources.

Regarding claim 18, the claimed virtual circuit information including information includes the number of nodes visited on path is disclosed by to promote efficient utilization of network, the vacancy of all channels is substantially equalized and there is a direct path and (N-2) two-hop paths available to each connection in the network where N is the number of modules where direct routes are attempted first and then the alternate routes are attempted. See column 16, lines 7-9, and lines 39-52.

Regarding claim 19, the claimed request includes the type of service desired, bandwidth desired, if bandwidth is available, step of determining a path through network selects a path using the desired service type is disclosed by connection admission request from source includes connection admission parameters and different classes of service. See column 2, lines 49-67 and column 3, lines 6-31.

Regarding claims 20-21, the claimed SONET and fiber-optic service is disclosed by the modules being connected by optical cross connectors (Figure 6, element 84), which are interconnected by optical links, and the optical links supporting several wavelengths. See column 14, lines 50-61.

3. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Beshai in view of Arslan et al. US 5,444,693.

Beshai discloses all of the limitations except for nodes being pseudo nodes. Arslan discloses providing a source and destination node along a path. See column 20, lines 49-68. At the time the invention was made it would have been obvious to modify Beshai's nodes to include pseudo nodes. One of ordinary skill in the art would be motivated to do so to restore circuit services faster.

Response to Arguments

4. Applicant's arguments filed 1/11/2008 have been considered but are not persuasive.

Applicant argues Beshai does not disclose "determining virtual circuit information for each structure group in a network," as claimed in independent claim 16. Applicant notes the instant application recites virtual circuit information can include "information for each structure regarding whether a path using a common channel is available through the structure."

Examiner respectfully disagrees. Beshai discloses each module having a module control element (Figure 7, element 85) that receives least cost routing table information from network controller to be used to select route for each path. See column 15, lines 37-61. The cost of each route being taken into account and that route lengths are also taken into account since they contribute in a substantial cost difference

between routes. See column 16, lines 39-65. The direct route between nodes (the claimed number of paths using a common channel through structure group between any pair of nodes) is attempted first but if none of the direct routes are available then alternate routes involving two hops are attempted in order to minimize cost of route. See column 16, lines 39-65. In light of the claim language, the rejection is proper.

Applicant argues Beshai does not disclose the availability of a channel being determined based on a slot-edge matrix and a slot-edge matrix maintained for various requestable time periods from the requests and wherein the availability of a channel is determined based on the slot-edge matrix for the time frame requested.

Examiner respectfully disagrees. Beshai discloses connection admission request from source nodes and each module maintaining a record of resources consumed by the path from a resource pool and a connection control table maintaining active connections. Each module selects least cost routes based on availability and the availability of routes is updated periodically. See column 12, lines 51-65 and column 15, line 37-56. Beshai discloses the requests are delivered to the routing processor. The processor executes a candidate-route selection algorithm and determines the set of core egress ports that will participate in the route selections. The request is sent to those ports and queued in the appropriate sub-queues according to the grade-of-service index for the associated connection admission request. The routing processor enters the number of candidate routes and the identity of the selected ports in a request-control table (the claimed slot-edge matrix). An array is used to store the number of routing requests waiting at each egress port. In the candidate route selection process,

the time period where there are waiting requests for available capacity to avoid excessive delay. Examiner interprets the waiting requests being taken account into the route selection between modules in the network in the request control table as teaching the claimed showing availability of channels for requestable time-periods.

As the Examiner stated, Beshai does not explicitly disclose the claimed slot-edge matrix is maintained for each data structure for requestable time periods, the availability of a channel is determined based on the slot-edge matrix. At the time the invention was made it would have been obvious to modify Beshai's connection tables to be maintained for time frame requested. One of ordinary skill in the art would be motivated to do so to provide quality of service to sources. In light of the claim language, the rejection is proper.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melanie Jagannathan whose telephone number is 571-272-3163. The examiner can normally be reached on Monday-Friday from 8:00 a.m.-5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wing Chan can be reached on 571-272-7493. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Melanie Jagannathan/
Primary Examiner, Art Unit 2619
March 21, 2008